

**Gauging the Benefits of Riparian
Restoration/Enhancement in a Working
Agricultural Landscape**

John C Brodie

Initial Selection Panel Review

0092

Gauging the Benefits of Riparian Restoration/Enhancement in a Working Agricultural Landscape

San Joaquin County Resource Conservation District

Applicant amount requested: \$1,174,003

Fund This Amount: \$0

Panel Discussion: This project on Mokelumne River had lots of interesting components but didn't hold together well to provide clear outcomes. There was a question on how broadly applicable the outcome of these tasks would be throughout the state agricultural community. The project could develop some baseline protocols that may be useful but they needed more work. Some felt the agriculture nexus could be strengthened.

The panel was supportive of many components of this project. There was support for Safe Harbor work. Agencies are encouraged to continue to look at this aspect. Also, if the applicant could develop some of the concepts to a greater extent, the project has the potential to be more widely applicable (e.g. to other grower groups).

This proposed project, however, is not in a priority geographic area. Further, the Panel found that there were many outstanding technical issues and could not recommend it for funding.

Final recommendation: do not fund

Do Not Fund

Technical Panel Review

Proposal Name: Gauging the Benefits of Riparian Restoration/Enhancement in a Working Agricultural Landscape

Applicant Organization: San Joaquin County Resource Conservation District

Amount Requested: \$1,174,003

Panel Rating:

Poor - Serious deficiencies.

Panel Summary

The proposal contained five components that read more as stand-alone projects. Some components were more worthwhile than others but as a whole the proposal did not describe a logical and cohesive effort. The scientific construction of the proposal is inadequate, both in terms of the underlying model and its proposed execution. The experimental design lacks the power to test the questions proposed and reflects poor research design. For example, the project presents an assumption that if beneficial insect populations were supported, biological control services would increase. This assumption is unsubstantiated and the proposal lacks the power to test the assumption. The applicants' strong credentials and the concepts behind the proposal show much promise, building upon the excellent work done by Lodi-Woodridge wine grape growers. If the technical aspects and management linkages were significantly strengthened and revised to be more conceptually and scientifically rigorous, another future project could provide useful data-backed examples of wildlife-friendly vineyard management. Specifically, vegetation restoration efforts could be redesigned in a manner that allows assessment of relative effectiveness of different combinations/designs. The issue of weed movement into fields needs to be monitored, and both weed and insect movement into fields would also depend on groundcover management in the vineyards or orchards, issues not considered by the current proposal.

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Proposal Name: Gauging the Benefits of Riparian Restoration/Enhancement in a Working Agricultural Landscape

Applicant Organization: San Joaquin County Resource Conservation District

Amount Requested: \$1,174,003

Goals

Rating	excellent
Comments	The proposal gives specific delineation of the working area and what the land use patterns and problems are under current management. While the goals are not directly defined as agricultural or environmental, this is fairly obvious as they are stated clearly in the proposal. These objectives appear tangible and somewhat measurable with a few exceptions. This project also does directly describe how it will integrate activities with restoration and agriculture (3 ways). One of these hypothesizes that by increasing ecosystem function they can reduce the need for chemical pesticide applications in agricultural areas. Much research has been done on this issue in other areas and cropping systems, but nowhere could I find any citation with regards to these projects. I agree with there hypothesis, but citations documenting this fact would be beneficial in helping validate their arguments and providing additional strength in why this should be funded.

Justification And Conceptual Model

Rating	good
Comments	I would not call the conceptual model clear, as in my opinion it could have been made simpler, but it did

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explain the interconnections between agriculture and the ecosystem and directly stated the hypothesis it is testing. This project is a pilot/demonstration project, but it was not clear this was the category applied for or justified.

Approach

Rating	fair
Comments	<p>The proposal did not describe in enough detail how it would be setup or designed especially with regards to restoration practices. No detail is provided that describes the how and when species will be planted and at what density. Since sites have not been delineated we do not know if it will be one linear piece, or several fragments that will be selected for restoration. Size of these projects could dramatically impact the results, as can the lack of several sites separated by adequate distance. A list of potential species is included, but no detail is given as to how these were selected and how they will be planted as this could dramatically affect success. The group does guarantee a 70% survival rate at the end of three years, which could alleviate this concern. Understory species to be planted in year two are not described. These will play a critical role in preventing the reestablishment of NIS, and more information on species selection, method of establishment should be included.</p> <p>I am also concerned about the species selection with regards to NIS management practices as often many NIS have significant seed banks. If a diverse group of species are planted at the same timing the result can be a mix of desirable and undesirable plants. This can make management very difficult as selective management methods such as mowing or</p>

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selective herbicides cannot be used and hand pulling and hoeing are the only methods available. I would recommend having restoration in 2 phases, with the first phase focusing on establishing a group of plants that are desirable and also will allow for continued management of NIS and other nondesirable plants. Once propagules reestablishment is eliminated or dramatically reduced, other desirable plants can be established. This can make restoration much more cost effective, and much less reliant on hand labor.

Specific management and restoration plans will be written for each site and adapted as seen fit in the performance evaluation section, but some initial information on how this will occur and which species will be utilized that will be planted to compete with which NIS should be mentioned. One of their goals is to determine which species compete best with NIS, but they do not mention how they will develop this information. They also have as a goal to reduce the impact of NIS species and their impact on the system, but have no measurements of the impacts of NIS. These species can displace desirable plants and animals, but can also alter soil attributes, hydrology, and a slew of other variables. Since this is an objective some measurements should be made. Considering that the specific sites have not been found, unknown variables such as access to irrigation water could prove to dramatically affect results of restoration.

Information on how NIS are controlled is not detailed either. Success rate can be highly variable depending upon the appropriate method and should be matched with planting to prevent any injury to desirable species.

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	<p>Assuming that restoration is successful and multiple sites are restored their approach could meet the objectives. Detailed information is present with regards to sampling in vineyards and documenting VELB, and this seems appropriate, but if plants cannot be effectively established and NIS managed this may be a moot point. If successful, this project could provide useful information, although the 3 year timescale may well be too short to truly documents changes.</p> <p>This information will definitely add to the base knowledge about integration of agricultural activities with ecosystem function and this information would be very beneficial to farmers and agency personnel as this could provide some critical information about the importance of a functional riparian system in agricultural areas.</p>
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Feasibility

Rating	good
Comments	<p>The project appears to be technically feasible but as previously stated more detailed information on how they will be conducted the NIS management and restoration is required. If these two critical steps are successfully accomplished the likelihood of success of this project is high. The project should be able to be completed within the 3 year time-frame, if restoration and NIS management is successful. I again emphasize that results of this project may not become visible for many years, and 3 years may not be adequate to view the response. It appears that the group will continue to monitor this project even after funding considering that they are currently doing some baseline monitoring. The project also does discuss permitting and compliance, and states</p>

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	that they are currently obtaining the appropriate approvals. These are obviously critical to the success of the project and without them the project may not be feasible.
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Performance Evaluation

Rating	good
Comments	<p>The proposal does include a performance evaluation plan where the tasks described will be evaluated.</p> <p>Tasks 1-2 are based upon timely completion of reports/permits which do not effectively test hypotheses, but are appropriate since these tasks are administration based.</p> <p>For task 3, they propose a performance evaluation is the development of a management and restoration plan for each site along with data collection of several variables. This is a requirement for successful weed management and restoration, but I am not sure how this will evaluate the performance. These plans should be part of the methods/approach. A separate plan that evaluates the success of restoration methods and NIS management is mentioned, but they will document survival and density. Since the project is guaranteeing a 70% survival rate I am not sure how valuable and appropriate this information is unless it is taken before any replanting. Plant cover would be a good additional evaluation tool as it could detect newly planted species as lower cover than older species. They also mention using this information for adaptive management, but it is not clear exactly how this will be done.</p> <p>Tasks 4-7 are appropriate and will demonstrate the efficacy of actions.</p>

Proposed Outcomes

Rating	very good
Comments	<p>Products of value could be generated by this project as it addresses a key issue that is directly linked between agriculture and ecosystem health. Regardless of the benefit to agriculture, this project will restore several areas and remove NIS which will be a big benefit for this riparian community. This project may or may not be a benefit to the agricultural industry, but this study will document this. This will directly provide site specific information as to the benefit within this watershed and be an excellent example that other regions/cropping systems can use as a model system. This project's outcomes could change management practices for farmers and make decision-makers provide addition resources for this to occur on a larger scale.</p> <p>Data storage seems appropriate as soil and water conservation districts are good stable sources where many individuals approach for additional information. Publication in information in other sources besides CALFED reports would help in information dissemination.</p>

Capabilities

Rating	very good
Comments	<p>By the information within the grant the team appears to have experience in management of large-scale grants, restoration within California river systems, and pest monitoring in agricultural areas. This would make them capable and qualified team members. Thy also appear to have the capacity and infrastructure to accomplish this task.</p>

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Cost-Benefits

Rating	good
Comments	<p>It is difficult to address the adequacy of the budget based on the information presented. Restoration can be extremely expensive, but as the group mentioned, large areas are required to adequately measure a response. For task 3 alone they are requesting approximately \$700,000 to restore 40 acres, which is \$17,500/A. This seems very expensive, and compared to riparian weed management in the SW US with saltcedar we can eliminate dense stands of 30 year old trees costing \$1000-5000/A and replant for \$1,000-\$7,000/A. Thus if using the most expensive methods, weed management and restoration would cost \$12,000/A! I would expect weed management costs to be much less as management of species mentioned in the proposal is much cheaper.</p>

Overall Evaluation Summary Rating

Rating	good
Comments	<p>This project is an excellent idea and has a great fit within this RFP. I think the hypotheses are solid, and a good chance that very important information with regard to the connectivity of agriculture with ecosystem health could be demonstrated. The reasons that this project was only rated good were due to the lack of information with on restoration and NIS management. If enough detail was given within these areas that made me confident that NIS management and restoration would be successful and the project areas were selected in a manner (correct size and enough paired restored/not restored sites) I would give this project an excellent rating.</p>

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Proposal Number: 0092

Proposal Name: Gauging the Benefits of Riparian Restoration/Enhancement in a Working Agricultural Landscape

Applicant Organization: San Joaquin County Resource Conservation District

Amount Requested: \$1,174,003

Goals

Rating	fair
Comments	<p>The project description has several clearly stated goals, but lacks measurable objectives and a feasible scientific program. While the project states that its intention is to demonstrate the value of integrating riparian habitat restoration with agricultural practices, the project actually offers little to no real integration. Agricultural operations would be spatially separate from restoration actions: the proposal states that restoration would occur in areas adjacent to actively farmed areas, and no lands would be taken out of production, nor would weeds be treated in the farmed areas. There is no proposal to alter any agricultural practices, such as new cover crops, runoff ponds, different tilling or plowing operations, reducing herbicide or pesticide use, or restoring stream channels to reduce flood risks on farms.</p> <p>The only functional ecological relationship described in the proposal between agriculture and habitat restoration is that habitat restoration would reduce pest damage and</p>

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pesticide use. While the proposal claims that habitat restoration would increase habitat for beneficial insects, resulting in decreased chemical use over time, no background information is offered to substantiate this claim. Importantly, the proposal states this relationship as a foregone conclusion, but there is no evidence that the scale, location, or design, or type of restoration is directly related to improving beneficial insect populations. In other words, if the mutually beneficial relationship between beneficial insects and agricultural practices is known, the proposal should demonstrate that the locations and species palettes used in restoration are designed specifically to increase desirable insect habitats.

The same is true for non-native invasive plant species removal. Some non-native plant species, for example, may prevent native plant regeneration, but nonetheless may provide suitable habitat from desirable insect species. Native Lepidoptera in the Central Valley, for example, rely almost entirely on non-native plant species. Therefore, it cannot be assumed that removing non-native plant species and replacing them with native species would inevitably improve habitat values for agriculturally desirable insect fauna. If the relationship is true, then the proposal should provide information or references to support this claim, either from the scientific literature or from its own 8 years of insect monitoring data. It would then logically follow that this information would be used to inform riparian habitat restoration goals and objectives through the prioritization of species, designs, and locations or riparian habitat restoration that is most likely to result in benefits to agricultural operations.

Justification And Conceptual Model

Rating	poor
Comments	<p>The project's hypothesis is that restoring riparian habitats will benefit farmers, and connecting farm operations to natural habitat will benefit biodiversity. The proposal does not have a clear conceptual model that explains functional relationships between farming and restoration. While I would agree that it is a valuable and worthwhile goal to restore riparian habitats on the margins of working farms, there is no real functional integration between agricultural processes and natural habitat. The proposal would restore areas that are not currently farmed. Farmer's might use less pesticides if beneficial insect populations increase, but the proposal makes no claim to actually change farming practices to improve habitat values or farm productivity. The value of integrated pest management is already well demonstrated and would and could be applied to existing farm operations without this proposed project. The project's relationship to farmers reads more like a simple access agreement with an indemnity clause to farm practices by installing Threatened species habitat on private property. The project proponents would seek access to private property, remove nonnative invasive plants and plant native species on stream banks, and monitor insect populations. The proposed Safe Harbor Agreement simply indemnifies the farmers from having to change their agricultural operations, and so by its very existence in the proposal suggests that no functional or procedural changes to the relationship between farming and adjacent habitats will substantially change. Instead, a Safe Harbor Agreement is really just a baseline regulatory condition that all farmers would seek prior to granting access to their land to restore sensitive habitats.</p>

Approach

Rating	poor
Comments	<p>The study designs appear inadequate to address the main scientific questions in the proposal. For example, the proposal states that it will test which native plants are best at outcompeting non-native invasive plants within the 3-year project. The proposal, however, offers no monitoring or data collection details that would provide useful information. The degree or extent interspecies competition is actually very difficult to measure or prove outside of highly controlled settings. Direct competition for above ground and below ground resources is highly dependent on a myriad of environmental conditions and plant life cycles. For many native plant species, for example, competition by non-native invasives is strongest or most effective during the seedling establishment phase, and that once a native plant is established, it will grow and thrive regardless of what species are next to it or were removed prior to establishment. Abiotic ecosystem processes, such as floodplain inundation and sedimentation, are also extremely important for setting the stage of competition. In Central Valley streams, many non-natives replace natives because they are better able to reproduce in the absence of periodic sedimentation and flood events.</p> <p>The only place where the project has potential to contribute valuable scientific information on the integration of agriculture and habitat restoration is the monitoring data on insect populations. The project could make valuable contributions; however, I find it unlikely that the project would be able to generate conclusive data. Three years of monitoring is</p>

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imply too short of a timeline to measure the effects of habitat restoration because the first year would consist of weed removal, and then it would require 3-5 years to establish native plants, and 25-50 years for a mature community to develop. In addition, I would expect some insect populations to vary dramatically with annual or seasonal weather and precipitation patterns, so detecting a longitudinal trend in populations would require more monitoring years than this proposal offers.

The proposal states, however, that agricultural insect monitoring has occurred over the last 8 years. I would expect that this pre-existing data may prove more useful to the project goals than the new data proposed to be collected. This existing bank of data could be analyzed to show relationships between insects and vegetation communities adjacent to farms. If functional relationships are found, then this information should inform restoration decisions and priorities, such as locations, extent, species palette, and well as priority weed species to be removed.

Feasibility

Rating	poor
Comments	On the one hand, the project is simple and feasible: gain access to private property, and remove invasive plants and establish native plant communities while continuing an existing program of agricultural insect monitoring. The techniques to accomplish these tasks are well known, and the proposal team appears well-qualified. The proposal does not appear capable of addressing its scientific or farm-habitat relationship goals. For example,

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there is simply no plan offered to test interspecies competition at restoration sites, which I would regard as a highly difficult task that would require a detailed scientific design to be presented.

As stated above, the relationship between insect populations and habitat adjacent to farms is probably best addressed by examining the existing eight years of monitoring data and correlating it adjacent to vegetation communities and controlling for annual or seasonal stochasticity. Importantly, there is no part of the proposal that seeks to actually change land use or agricultural operations. All of the work is proposed on the unused margins of farms with legal indemnification in the form of Safe Harbor Agreement to specifically assure farmers that they could continue business as usual. While I do not doubt that the project could succeed in restoring riparian habitats, I sincerely doubt, based on the information provided in the proposal, that the project can accomplish its stated scientific goals or goals of showing integration between farming and habitat restoration.

For example, the proposal states that it would "develop and implement agricultural practices that benefit MSCS-R covered species, specifically VELB" (p.16), but the proposed project would make no specific changes to farm operations. The extent of the work appears to be planting elderberry shrubs in the unfarmed margins. While this is an ecologically useful undertaking and a potentially important step towards the recovery of VELB, I fail to see how this would affect any agricultural practice, and the proposal essentially states as much. So what useful information then,

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could be derived from the project and shared throughout Central Valley farms? Really, that Safe Harbor Agreements may be a viable legal means to simultaneously meet species and landowners needs. But establishing the utility of this legal protection umbrella to accomplish restoration goals is a substantially different objective than a proposal that would alter an actual agricultural practice to directly enhance species habitat.

Another concern I have about feasibility is the lack of permitting described. While the proposal states that it will need a State Reclamation Board Floodplain Encroachment Permit, the Rec Board may require a detailed 2-dimensional hydraulic model prior to allowing vegetation encroachments. This could be a very expensive technical study (e.g., >\$50,000). The Rec Board is also especially concerned about the further establishment of elderberry shrubs in floodways because it may greatly increase the costs of future flood control actions if flood control agencies have to deal with Endangered Species Act compliance.

The proposal also neglects, I believe, to disclose that ESA Sec. 7 or 10 compliance with the USFWS and NOAA Fisheries, for VELB and listed salmonids respectively, may be required prior to non-native invasive species removal. Hand or mechanical removal of weed species, and the use of herbicides, all have potential to result in incidental take of listed species and their habitats. A CDFG LSAA (Sec. 1601) and Clean Water Act Sec. 401 and 404 permits may also be required for any work on the bed and bank of the river such as vegetation clearance and herbicide use, as well as NEPA

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	compliance by federal regulatory agencies. The proposal should review the regulatory framework again and the proponents should disclose specifically why these permits would not be required for these actions.
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Performance Evaluation

Rating	fair
Comments	The proposal has a woefully inadequate performance plan. The insect monitoring aspects of the project seem clear and reasonable, and will contribute useful data if the monitoring is consistent and prolonged, and able to build on the existing eight years of data. The proposal, however, provides no substantive monitoring plan to address questions of interspecies competition or even the performance of weed removal actions and restoration planting. I find it to be an important oversight that the proposal suggests that weed removal could occur in the first year, and planting in years 2 and 3. From my experience, it normally requires 2-3 years to eradicate invasive species from a site. While mature plants and most weed biomass could be removed in year 1, and planting of some species could proceed, the plan should address follow maintenance actions and ongoing weed control at restoration sites with specific monitoring actions and performance objectives.

Proposed Outcomes

Rating	poor
Comments	I find that the proposal is unlikely to demonstrate that efficacy of agricultural management or restoration actions. No changes to agricultural management are proposed that would specifically result in improved habitat conditions. The agricultural

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	management components of the project are important in that they may be able to demonstrate that endangered species habitat restoration can occur on farms without affecting farming operations. However, this is substantially different from a project that may directly involve landowners or farmers beyond an access agreement by, for example, installing cover crops in vineyard avenues or changing irrigation and runoff regimes or patterns.
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Capabilities

Rating	good
Comments	The project team appears to have the skills and experience necessary to complete the main tasks of removing weeds, restoring riparian habitats, and monitoring insect populations. The proposal, however, has not demonstrated an adequate level of experience or expertise in addressing the scientific questions, adaptive management, or the legal regulatory permitting framework that would be required to meet project goals.

Cost-Benefits

Rating	fair
Comments	The proposal appears reasonable and adequate for the scope and scale of the physical work, but there may be substantial and expensive regulatory permitting and environmental compliance costs that have been overlooked

Overall Evaluation Summary Rating

Rating	poor
Comments	The proposed project attempts a noble task of restoring valuable wildlife habitat in the matrix of a working landscape. Incorporating habitat restoration on the riparian margins of working farms in the Central Valley is critical for the recovery of many

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rare, Threatened, and Endangered species. The project could have important demonstration value of how to use a Safe Harbor Agreement to restore riparian corridors dominated by private landowners. The proposal, however, did not convince me that the project will adequately address the scientific, land management, or agricultural practices questions that it attempts to answer. The design of the project, and the description of the monitoring programs, suggests that the project will not collect data to test the hypotheses set forth in the proposal

External Technical Review #3

Proposal Number: 0092

Proposal Name: Gauging the Benefits of Riparian Restoration/Enhancement in a Working Agricultural Landscape

Applicant Organization: San Joaquin County Resource Conservation District

Amount Requested: \$1,174,003

Goals

Rating	fair
Comments	<p>The goal, as stated is admirable. Obviously, the project is trying to address restoration of a system that is essentially eliminated from the Central Valley. Only 10% of the riparian corridor is still in existence and most of what is left is highly fragmented. For all the focus upon showing that working landscapes can coexist with endangered species (e.g., Valley Ederberry Longhorn Beetle [VELB])the sad reality is that agricultural conversion of the Central Valley is mostly irreversible and it's not practical to think that endangered species and intensive agricultural landscapes can coexist and "thrive." However, to reach some level of recovery of the threatened VELB seems possible due to its seemingly straightforward life history.</p> <p>Objective 1 gives no indication that cooperating landowners will be selected based upon the highest priorities identified relative to ecosystem restoration and/or recovery of the VELB. It appears this will be a purely opportunistic exercise looking for producers who are willing to enroll sites into the project. Objective 2 mentions incentives for landowners. Other than certification via the Lodi Rules program, it's hard to decipher what is meant by</p>

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"incentives." Since this program is available presently, I was not clear as to how the present proposal adds value to potential incentives for landowners. Objective 3 speaks of VELB recovery (and other at-risk species- but none were identified in the proposal except for salmon- no mention of Swainson's hawk, brush rabbit) but provides no real bench marks for what that means. Objective 4 mentions that non-native invasive plants will be reduced and prevented from establishing, but again, there were no clear metrics on this in the proposal itself. I was looking for background tied to a local weed management district that specifies an Early Detection and Rapid Response program that could support this objective but didn't see any reference to that. Objective 5 speaks of measuring benefits of riparian restoration x agricultural benefits. In my experience what this really calls for is a benefit/cost analysis and risk assessment--- an agricultural economics challenge. I did not see reference to such an approach in the proposal.

Justification And Conceptual Model

Rating	fair
Comments	<p>The conceptual model is unclear to me. First, I'm not clear on why "reestablishing links" between riparian habitat and agricultural operations is part of the hypothesis. Isn't that really the identified threat-- agricultural conversion of the riparian habitat corridor? The links that need to be stressed are those that are most practical to reestablish between and amongst the best (in terms of representative plant communities, VELB populations, and hydrological intactness). Those landowners that harbor these patches that represent the "best of the last" should be prioritized accordingly within the context of the restoration effort.</p> <p>I am not clear on the Indicators mentioned in the model. It appears to me that those items identified as</p>

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indicators are in fact broad, categorical monitoring efforts that should assist in determining "benefits" of the project. Indicators that should actually be listed are those defined as being key ecological attributes tied to specific elements of the riparian corridor or are key socio-economic aspects of the agricultural operations tied to the restoration effort. For example, an indicator for increasing VELB habitat would be something like: establishment (70% survival) of elderberry as a primary component of a native plant assemblage (1:1 ratio) and within 3 years 80% of stems, 1" or greater have beetle exit holes. Other specific ecological attributes should be developed as indicators to explicitly define "benefits." For example....to say "improve ecosystem function" what does that really mean??...without explicit indicators...it is far to vague to grasp.

As far as I could tell...reading Section B on page 16, I believe this project is designed as a "pilot scale demonstration." It appears the project will focus upon restoring 40 acres of riparian habitat. I guess without certain knowledge of who the landowners might be that will participate in this project, selecting a pilot scale effort makes sense. However, I am not clear how the restoration site ranking effort mentioned in the proposal will be explicitly tied to areas identified for the project. Most reference made to how the 40 acres would be designated mentioned that the most willing landowners would be selected. I understand this challenge, but an explicit effort to identify what makes the most sense from a landscape restoration perspective should be made more explicitly. Overall, 40 acres of restoration for the amount of funding here, seems out of alignment.

Approach

Rating	fair
Comments	It's really not clear as to exactly what data will be collected and what sort of experiemental design will

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be used to ensure a means to test core hypotheses. Again, I think more explicit metrics for "benefits" need to be set as benchmarks of success. The design and data collection must be adequate to sufficiently quantify outcomes. Again, as for the benefits related to agricultural producers from riparian restoration (beneficial insects, harmful insects, etc.). The basis data to be collected appear adequate, however, this is really an agricultural economics exercise. Benefits or costs MUST be tied to each producer's operation. The potential "exportability" of this effort will hinge in very large part on what the economics say. Doing field days and incorporating high school students into the effort is surely an admirable approach to getting the word out and generating some PR. However, I have trouble seeing how those activities really may help in determining "added value" to producers cooperating in the project. Again, benefits and costs must be quantified to assess long term usefulness of the approach.

Feasibility

Rating	fair
Comments	Yes, as described, the project approach is feasible. That's a different question than asking if the approach is correct. I feel that some limited restoration effort can be achieved on 40 acres. What that will mean for the recovery of the VELB, riparian community, and the affected landowners is far from clear. I sense that the site ranking information that is mentioned, would, if used as a key guide to landowner selection, drastically improve likelihood of success. In addition...defining the producer-working landscape issue in the form of an agricultural - microeconomic question, makes more sense.

Performance Evaluation

Rating	poor
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Comments	<p>I've addressed this aspect, at least in part in other previous sections. I believe this aspect is the weakest component of the proposal. Several statements indicated that if expected results are not achieved, then the experimental design will be changed (see p. 11-12). This is certainly not an appropriate means of objectively evaluating project performance. In addition, I was not clear as to what specific experimental design would be used to evaluate the various objectives of the project.</p>
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Proposed Outcomes

Rating	fair
Comments	<p>Any time you can restore portions of a critically threatened habitat, I see value. The value of contributions from this project to ecosystem health and agricultural "value added" at this time is very unclear. I think with some serious revisions tied to experimental design and explicit indicators as well as critical feedback from expertise in agricultural economics the proposal could be viable.</p>

Capabilities

Rating	good
Comments	<p>I don't have any reason to doubt the capabilities of the project team. However, this sort of effort needs to be much more interdisciplinary. A population biologist, agricultural economist, and perhaps an on the ground conservation practitioner (from Environmental Defense or the Nature Conservancy) could have added tremendously to the proposal effort. Also, I'm not clear why programs administered via the NRCS weren't discussed more specifically--- buffers program, WRP, EQIP, CRP, WHIP.</p>

Cost-Benefits

Rating	fair
Comments	<p>I'm most surprised by the amount that is necessary to do the actual restoration work. I know putting "humpty dumpty" back together is not cheap work. But that task calls for something > \$17 K for every acre. That really seems awfully high to me. I have never dealt with sub irrigation of restored sites....perhaps that is the biggest cost. Also, after doing some checking, I found that riparian restoration in the Central Valley can be done for ~ \$8K/acre. The amount requested in this proposal is substantially more than that. I may be missing something here but it would have been helpful for me to see some specifics beyond what I saw in the task budgets.</p>

Overall Evaluation Summary Rating

Rating	fair
Comments	<p>While the intent of the project is worthy, I don't believe the approaches described here will produce the data and analysis necessary to optimize potential exportability of this approach throughout the Central Valley.</p>

Delta Regional Panel Review

Proposal Number: 0092

Proposal Name: Gauging the Benefits of Riparian Restoration/Enhancement in a Working Agricultural Landscape

Applicant Organization: San Joaquin County Resource Conservation District

1. Applicability to ERP goals and regional priorities.

The project meets the goals and objectives of CALFED and ERP. Specifically, this project addresses Goals 1, 4, 5, and MSCS Milestones as mentioned in the proposal. The project does address priorities for the region identified in the ERPP (2000). The project does not address the geographic priorities identified in the PSP; however, the applicants have proposed a pilot/demonstration project that would provide insight into promoting wildlife friendly ag methods, particularly for viticulture, and benefits that could be applied at a larger scale.

notes:

2. Links with other restoration actions.

The project does build on other restoration activities in the region, particularly those conducted in the Mokelumne River, but results should be applicable on a wider scale both within the region and in other regions with similar environments/agriculture practices. The project appears to focus entirely on vineyards, rather than a range of agricultural practices, limiting the applicability of results but allowing more focused research.

notes:

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Delta Regional Panel Review

The proposal includes a very brief provision that a portion of the funding would be used to conduct monitoring work on a separate (completed) restoration project. It is not clear how this monitoring work fits with the PSP or the rest of the proposal.

3. Local circumstances.

There do not appear to be any factors that would limit the project's ability to move forward in a timely manner. However, the applicants should consider the presence of the NIS New Zealand mudsnails that have been documented in the Mokleumne River and implications for inadvertently spreading them (as well as other NIS) through the project's activities.

notes:

The project appears to be feasible, but there is insufficient detail to evaluate the more technical aspects of the project. There is little information on the science of the proposed activities including plot design, species sampling methods, etc.

4. Local involvement.

There appears to be sufficient interest from local landowners, although the applicants have not identified the participating landowners/locations yet. The applicants have specified that 45 landowners have expressed interest in riparian restoration activities and the establishment of the Lodi-Woodbridge Winegrape Commission indicates substantial interest in this type of effort. I am not sure that 2 public meetings are sufficient. I think it might be worthwhile to have initial public meetings, then a progress report and perhaps final summary, particularly for landowners that are adjacent/near

Delta Regional Panel Review

the selected study locations.

notes:

Some panel members questioned the on-the-ground use of collected information in contrast to the proposal's emphasis on public outreach meetings. The preproject outreach was also viewed by some panel members as insufficient.

5. Local value.

If successful, the project could provide a suite of methods for promoting wildlife-friendly ag associated with vineyard cultivation. With increasing conversion of row crop land to vineyards and orchards, this value of this project seems likely to grow in future years both within the region, and throughout the Delta.

notes:

6. Applicant history.

To my knowledge, the applicant has performed well on previous projects.

notes:

The Lodi-Woodbridge Winegrape Commission is very well-regarded and is known as a leader in state and grower collaborative efforts.

7. Summary of Overall Panel Discussion and Review

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Although the proposal does not take place in a priority region designated in the PSP, the proposed activities would benefit the entire region. The proposal does not include much detail about proposed research activities. Thus, the feasibility of the project is difficult to assess. The panel was impressed with the emphasis on landowner involvement, especially in light of the increasing importance of vineyards in the Delta. One panel member has some concern about the sufficiency of information/outreach efforts. Another panel member felt the proposers should address the concern of spreading New Zealand mudsnails during restoration activities. There is also concern that the budget is large given the scale of the project.

Finally, the panel liked that the proposal was based on implementing a previously-funded watershed plan with significant stakeholder involvement.

8. Panel Quality Ranking

Good

notes:

9. Regional Priority Ranking

High

notes:

Environmental Compliance Review

Proposal Number: 0092

Proposal Name: Gauging the Benefits of Riparian Restoration/Enhancement in a Working Agricultural Landscape

Applicant Organization: San Joaquin County Resource Conservation District

1. Is compliance with California Environmental Quality Act (CEQA) required for this project?

Yes.

2. Is compliance with National Environmental Policy Act (NEPA) required for this project?

Yes.

3. Does this project qualify for an Exemption or Exclusion under CEQA and NEPA, respectively?

No.

4. Did the applicant correctly identify if CEQA/NEPA compliance was required?

No.

Comments

Identified CEQA correctly but indicated that NEPA was not required. Federal permits are being obtained, therefore NEPA is required.

5. Did the applicant correctly identify the correct CEQA/NEPA document required for the project?

Yes.

Comments:

Yes for CEQA, no for NEPA (see above)

6. Has the CEQA/NEPA document been completed?

No.

Environmental Compliance Review

7. If the document has not been completed, did the applicant allot enough time to complete the document before the project start date?

Yes.

8. If the document has not been completed, did the applicant allot enough funds to complete it?

Yes.

Comments:

It is difficult to say if they allotted enough time or funds to complete the environmental doc's. They are being completed separately as part of a programmatic document under another grant. They indicated in this application that 4 months would be needed for a CEQA mitigated neg dec and 6 months for all other permits which is possible but ambitious. They do state that the env. doc's are currently being worked on and will be completed in time to implement this project.

9. Did the applicant adequately identify other legal or regulatory compliance issues (Incidental Take permits, Scientific Collecting permits, etc.) that may affect the project?

No.

Comments:

They are obtaining their permits through another grant and did not clearly indicate which permits they are applying for.

Identify those additional permits that may be needed by this project:

Streambed Alteration Agreement ESA Section 10(a)(1)(A) for safe harbor possibly a grading permit

10. Does the proposal include written permission from the owners of any private property on which project activities are proposed or, if specific locations for project activities are not yet determined, is it likely that permission for access can be obtained?

Yes.

11. Do any of these issues affect the project's feasibility due to significant deficiencies in planning and/or budgeting for legal and regulatory compliance or access to property?

No.

Environmental Compliance Review

Comments:

Difficult to say. This proposal does not indicate what permits or environmental doc's are being completed as part of the programmatic agreement. They need to provide assurances that env. doc's/permits will be in place prior to implementation. Page 13 of the main text states that this project is somewhat dependent on the outcome of other projects such as the programmatic safe harbor agreement and watershed restoration env. doc's and permits.

Budget Review

Proposal Number: 0092

Proposal Name: Gauging the Benefits of Riparian Restoration/Enhancement in a Working Agricultural Landscape

Applicant Organization: San Joaquin County Resource Conservation District

1. Does the proposal include a detailed budget for each year of the requested support?

Yes.

2. Does the Budget Form include a detailed budget for each task identified on the Task and Deliverables Form and in the proposal text?

No.

If no, please explain:

\$989,676.00 of the budget needs to be resubmitted with detail. All of this amount is the subcontracts.

3. Are the costs associated with each task and deliverable reasonable costs for performing the services?

No.

If no, please explain:

Can't tell. See answer above.

4. Is each person (employee, consultant, subcontractor, etc.) identified on the Personnel Form also included on the Budget Form?

No.

If no, please explain:

Not enough detail on the subcontracts to determine.

5. Are there estimated hours and an associated hourly rate of compensation for each person identified on the Personnel, Tasks and Deliverables, and Budget forms?

Budget Review

No.

If no, please explain:

Can't tell, not enough detail.

6. Does the budget include the benefit rate for all personnel identified on the Personnel and Budget forms?

Yes.

If no, please explain:

10% for all?

7. Are the proposed labor rates comparable to state rates?

No.

If no, please explain:

Can't tell, not enough detail.

8. Is more than 25% of the work proposed to be performed by subcontractors?

Yes.

If yes, what is the exact percentage to be performed by subcontractors?

84%

9. Are project management expenses appropriately budgeted?

Yes.

10. Does the proposal clearly state the type of expenses encompassed in indirect rates or overhead costs? Are indirect rates, if used, appropriately applied?

No.

If no, please explain:

No explantion provided.

11. Does the proposal adequately explain major expenses? Are the labor rates and other charges proposed reasonable in relation to current state rates?

Budget Review

No.

If no, please explain:

Subcontracting work, not enough detail.

12. For equipment \geq \$5,000, was a separate worksheet filled out?

Please note: No overhead or indirect rate charges are allowed on the equipment purchases

No.

13. Is the purpose for all travel clearly represented in either the proposal itself, or in the Tasks and Deliverable Form?

Please note: Recurring travel costs for a specific task or subtask may be combined into one entry on the Budget Form, but the number of trips and cost for each trip must be clearly represented.

No.

14. Are travel and per diem at rates specified by the California Department of Personnel Administration for similar employees?

No.

15. Are other agencies contributing or likely to contribute a share of the projects? costs?

Yes.

If yes, when sufficient information is available, please total the amount of matching funds likely to be provided:

\$55,000.00

16. If the applicant identified cost share or matching funds, are they also described in the text of the proposal?

Yes.

17. Does the applicant take exception to the standard grant agreement's terms and conditions? If yes, are the approaches the applicant proposes to address these issues a reasonable starting point for negotiation a grant agreement?

Budget Review

No .

18. Are there other budget issues or "red flags" that warrant consideration?

No .

19. Provide revised amount requested based upon your review:

\$